

CLAIMS

1. A capacity controller of a compressor with variable capacity, **characterised by** controlling the capacity of said compressor by causing a differential pressure to an inhalation pressure of said compressor on an arbitrary level by a piston valve body onto which force adjusted by a solenoid and said inhalation pressure are applied, and by using said differential pressure in the capacity varying mechanism of said compressor to vary the capacity of said compressor.
2. Capacity controller as in claim 1, wherein when pressure within a housing space movably receiving said piston valve body of said controller is acting on said piston body in a direction opposite to said inhalation pressure falls below a fixed pressure said differential pressure is added to said inhalation pressure and said piston valve body is moved in opening direction such that said space communicates with a discharge pressure duct of said compressor and said pressure within said space is maintained at said fixed pressure corresponding to the sum of said differential pressure and said inhalation pressure.
3. Capacity controller as in claim 1, wherein when pressure within a housing space receiving said moveable piston valve body of said controller acts on said piston valve body in a direction opposite to said inhalation pressure exceeds the sum of said differential pressure and said inhalation pressure, said piston valve body is moved in opening direction such that said space communicates with an inhalation pressure duct of said compressor and said pressure within said space is maintained at

the fixed pressured corresponding to the sum of said differential pressure and said inhalation pressure.

4. Capacity controller of a compressor with variable capacity, comprising a pressure controlled capacity variation mechanism at said compressor and a solenoid actuated capacity controller, said controller generating a variable control pressure for said mechanism on the basis of the initial value of an inhalation pressure of said compressor, wherein said controller comprises a fixed pressure differential valve consisting of a valve seat and a piston valve body with a front end valve closure jaw part axially moveable in a space between opening and closing states in relation to said valve seat,

said space having an axial differential pressure port adjacent to said valve seat,

a sidewardly located discharge pressure port adjacent to said valve seat,

and rear inhalation pressure port communicating with the rear end of said space via a rear pressure effective surface of said piston valve body is situated,

said piston valve body being loaded by pressure in said differential pressure port in a first axial direction towards said closing state and by pressure at said inhalation pressure port in a second direction towards said opening state,

said differential pressure port being connected to a control pressure cylinder part of a cylinder of said mechanism such that increasing pressure at said differential pressure port adjusts said compressor capacity towards a maximum,

said discharge pressure port being connected to a discharge duct of said compressor,

said inhalation pressure port being connected to an inhalation port of said mechanism,

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said differential pressure port and said inhalation pressure port being directly interconnected via a leak passage,

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and wherein said piston valve body additionally is acted in a direction towards the opening state by a thrust generated by said solenoid, when supplied with a current, the value of which determines the value of a differential pressure between said control pressure and said inhalation pressure at said differential pressure port.

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A capacity controller of a compressor with variable capacity, comprising a pressure controlled capacity variation mechanism at said compressor and a solenoid actuated capacity controller, said controller generating a variable control pressure for said mechanism on the basis of the value of an inhalation pressure of said compressor,

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wherein said controller comprises a fixed pressure differential valve consisting of a valve seat and a piston valve body with a front end valve closure part axially moveable in a space of said controller in relation to said valve seat between opening and closing states,

said space having an axial differential pressure port and a sidewardly located inhalation pressure port adjacent to said valve seat, said piston valve body being acted by the pressure at

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A method to control the capacity of a compressor with variable capacity by a pressure controlled capacity variation mechanism and a solenoid actuated capacity controller, said controller

generating a variable control pressure for said mechanism
 corresponding to variations of an inhalation pressure of said
 compressor, wherein an expanded variation range of a
 differential pressure between said control pressure actuating
 said mechanism and said inhalation pressure of said
 compressor is controlled by the value of a current supplied to the
 solenoid of said controller, and wherein an initial value of said
 differential pressure is maintained by relieving a part of said
 control pressure via said controller to a low pressure inhalation
 duct of said compressor and by superimposing a predetermined
 pressure adding throttling function between said mechanism and
 a discharge duct of said compressor.

9. A method to control the capacity of compressor with variable
 capacity by a pressure controlled capacity variation mechanism
 and a solenoid actuated capacity controller said controller
 generating a variable control pressure for said mechanism
 corresponding to variations of an inhalation pressure of said
 compressor,

wherein an expanded variation range of a differential pressure
 between said control pressure actuating said mechanism and
 said inhalation pressure of said compressor is controlled by the
 value of a current supplied to the solenoid of said controller, and
 wherein an initial value of said differential pressure is maintained
 by adding pressure of high pressure refrigerant of a discharge
 pressure duct of said compressor via said controller to said
 control pressure and by permanently superimposing a
 predetermined pressure relieving throttling function between said
 mechanism and a low pressure inhalation duct of said
 compressor.

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